

The production of textbooks in mathematics in Sweden, 1930-1980

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Abstract

This paper presents a bibliometric study on the production of mathematics textbooks in Sweden in the period of 1930–1980. The analysis concerns grades 1-9. The main source is a database of mathematics textbooks. Official reports on the Swedish textbook market comprise a second source.

Introduction

The study presented here is a bibliometric analysis of the production of textbooks during the period of 1930-1980. Apart from presenting the results of the analysis, changes to textbook production are viewed in relation to other changes in the Swedish school system. The purpose of the latter is to illuminate how the conditions for reforming mathematics in Swedish schools changed in this period. I also discuss possible causes of why textbook production changed. My aim here is not to be comprehensive, i.e. there may be more causes not considered in this paper.

The reason for restricting the focus to the period after 1930 is methodological: the database used for the analysis is not reliable prior to 1930. The reason for excluding the period after 1980 is related to format – the paper would be too long.

But 1930-1980 is an interesting period in which the Swedish school system underwent important changes. Moreover, during this period, the New Math reform was prepared and implemented. For further details, see the background section below.

The study presented is part of a research project entitled: *The development of school mathematics and reforms of the Swedish school system in the twentieth century: a comparative and historical study of changes of contents, methods and institutional conditions*. The project aims to examine how Swedish school mathematics changed in primary school (grades 1-9) in the twentieth century, especially during major general school reforms.

Contribution to previous research

Research on the history of Swedish mathematics education in the twentieth century largely concerns the content of various types of educational texts, such as textbooks, teachers' journals, teaching literature, syllabi and other policy documents; see for instance Lundin (2008) and Prytz (2007; 2009; 2012; 2015). Sociological perspectives are also occasionally applied; see for instance Lundin (2008) and Prytz (2009).

There are also two studies by Kilborn (1977) and Prytz & Karlberg (2016) on the preparations of the Swedish New Math reform of the 1960s.

None of the studies mentioned above consider the production of textbooks. In that respect, this study adds new knowledge to previous research. In the final section, I will discuss how this new knowledge may offer new insights into the conditions for initiating, preparing and implementing changes to mathematics in Swedish schools.

From an international perspective, the relevance of this study concerns its methodology: to my knowledge, no similar bibliometric analysis has ever been done on mathematics textbooks.

Method

The work to analyse the production of textbooks involved a database of mathematics textbooks, primarily from around 1900. The construction of the database is described in Prytz (2016) and I only provide an outline of it in this paper.

The database consists of bibliographic data regarding mathematics textbooks. The data have been collected from two sources: the joint catalogue of the Swedish academic and research libraries (LIBRIS) and lists of approved textbooks issued by the national textbook review board. Note that LIBRIS includes the catalogues of the National Library, to which publishing companies have been obliged to send a copy of all publications since 1661.

To enhance the reliability of the database, especially for books published before 1976, the database was checked against lists of approved textbooks issued by the national textbook review board during the period of 1930–1973. LIBRIS was created in 1976 and the categorization of textbooks is less reliable before that year. The missing data were entered into the database.

The best way to analyse the production of textbooks would be to count all editions of all textbooks published. This, however, is not possible, since LIBRIS does not include all editions of all textbooks. Instead, I have chosen to map the production of completely new textbooks, i.e. first editions. LIBRIS includes all first editions of books.

Accordingly, the statistics presented in this paper concern the influx of new textbooks. When searching to determine when new textbooks were published, the basic principle was to filter out the earliest publishing date of all textbooks in the database.

There is however a methodological error associated with this method. In most cases, the earliest publishing date coincides with the first edition. Most exceptions are for cases in which data are collected only from the lists of approved textbooks, i.e., books not found in LIBRIS. The earliest list regarding one school type (*Realskolan*) is from the late 1920s; for the second school type (*Folkskolan*), the first list is from the late 1930s. Consequently, there is an overrepresentation of new textbook publications in the 1930s. This means that first publications that were actually issued in earlier decades are included in the 1930s in my statistics.

Another problem concerns the process of counting textbooks. The basic problem is that textbook formats have changed over time. For instance, in the 1970s, it was common for a textbook series in mathematics to comprise numerous booklets, rather than a book with multiple chapters, which was common in the 1960s and earlier. In LIBRIS, each booklet is registered as a book. A consequence of this format change is that the number of published textbooks in the 1970s appears to have been enormous. To avoid this problem, series of textbooks, rather than single textbooks, have been counted.

However, this does not solve the problem completely. *Realskolan* had no series; each topic (arithmetic, algebra and geometry) had its own textbooks and they could be used for more than one school year. But in practice, this problem is insignificant, because so few new textbooks were produced for *Realskolan* after 1930.

So, even though we lack a perfect common measure, it is possible to accurately discern the increase of new textbooks in the 1950s.

Apart from using the database and bibliometric analysis, I have used official reports on textbook production as source material and I have gathered information about the Swedish textbook market.

Background

In the beginning of the investigated period of 1930-1980, the Swedish school system (1-9) comprised several school types. This paper concerns the two largest: *Folkskolan* and *Realskolan*.

Folkskolan was the larger of these two. When *Folkskolan* was introduced in 1842, it comprised grades 1 to 6. However, throughout its existence, it has included two parts: *Småskolan* (direct translation: *Little School*) constituted the first two grades, while *Folkskolan* constituted the next four grades (Larsson & Westerberg, p. 106).

Textbooks and textbooks series in mathematics were often dedicated to only one of the two school types.

A law passed in 1936 prescribed that all students should attend school for at least seven years. However, the regulation was implemented gradually and was not completed until 1950. But in some (primarily urban) parts of Sweden, *Folkskolan* was extended to eight or nine grades (SCB 1974, pp. 23-24). The portion above grade 6 was called *Folkskolans överbyggnad* (direct translation: *Folkskolan's superstructure*). Many mathematics textbooks were dedicated to only this part of *Folkskolan*.

A partly parallel school type to *Folkskolan* was *Realskolan* – a lower secondary school. When it was introduced in 1905, students entered in grade 4. This was later changed to grade 5 or 7; the students could choose when. In contrast to *Folkskolan*, the syllabus of *Realskolan* was more theoretical; students were supposed to become prepared for further theoretical studies in *Gymnasium* (9-12, upper secondary school) or more advanced vocational educations. Initially, *Realskolan* had only one programme. This changed in 1933, when a practical programme was introduced (Larsson & Westerberg, pp. 126-129).

Before 1905, the predecessors to *Realskolan* and *Gymnasium* were more integrated, belonging to the so-called *Läroverket*. The origins of *Läroverket* date back to medieval cathedral schools. However, even after 1905, *Realskolan* and *Gymnasium* continued to be part of *Läroverket*. Here we should note that there were no alternatives to *Realskolan* within *Läroverket*.

From a sociological perspective, students and teachers alike at *Folkskolan* and *Läroverket* were generally recruited from different socioeconomic classes. *Folkskolan* was a school for the lower class, while *Läroverket* was a school for the upper-middle class and beyond.

When considering the mathematics courses and textbooks of *Folkskolan* and *Realskolan*, the greatest differences can be seen in grades 6-9.¹ The geometry courses of *Realskolan* included proofs, and the textbooks were designed according to the axiomatic-deductive method (Prytz 2007, pp. 125-161). The *Folkskolan* courses did not include these elements. The time at which algebra was introduced and the scope of the topic also differed: algebra was introduced in grade 6 in *Realskolan* and grade 7 in *Folkskolan*. If we consider the syllabi of grade 9, we find formulations about systems of equations and quadratic equations in the *Realskolan* syllabus, but not in the *Folkskolan* syllabus. The latter contains more formulations about simple equations and practical applications.

A reform launched in 1962 that would replace *Folkskolan* and *Realskolan* with a single, mandatory nine-year school: *Grundskolan*. This change was implemented over a ten-year period. But already in the 1950s, preparations for *Grundskolan* had

¹ In both *Folkskolan* and *Realskolan* during the period investigated, mathematics was taught in all classes and courses were obligatory for all students. Both schools were open for both boys and girls and they took the same courses in mathematics.

begun (Larsson & Westerberg, p. 113). A kind of experimental school type called *Enbetskolan* (*Unitary School*) was formed, covering grades 1-9. Organization and new types of teaching were tested in this school.

Mathematics education did not change radically in conjunction with the introduction of *Grundskolan* in 1962. A simple characterization is that the former mathematics syllabi of *Folkskolan* and *Realskolan* were integrated into *Grundskolan*. In grades 1-6, all students took the same mathematics courses, but in grade 7, they had to choose between a basic and an advanced course. The former was similar to the *Folkskolan* courses, while the latter was similar to the *Realskolan* courses. A major change, though, was that geometry was given a less prominent place in the advanced *Grundskolan* courses than in *Realskolan*.

The major change to the *Grundskolan* mathematics syllabus arrived in 1969, when *Grundskolan* received a new curriculum. In connection to this reform, New Math was introduced in grades 1-9.

More details on the syllabi in mathematics mentioned above are given in Prytz (2015).

In the period of 1930-1960, the Swedish school system (1-9) expanded in terms of the number of students, as illustrated in Tables 1-5.

Table 1. Number of students in *Folkskolan* (Source: SCB 1974)

| Year | 1930 | 1940 | 1950 | 1960 |
|--------------------|---------|---------|---------|---------|
| Number of students | 672,823 | 548,792 | 612,158 | 843,110 |

Table 2. Number of students in *Folkskolan*, grade 8 and above (Source: SCB 1974)

| Year | 1941 | 1950 | 1959 |
|--------------------|-------|-------|--------|
| Number of students | 3,253 | 6,529 | 48,494 |

Table 3. Number of students in *Realskolan* (Source: SCB 1977)

| Year | 1930 | 1940 | 1950 | 1959 |
|--------------------|--------|--------|---------|---------|
| Number of students | 61,551 | 69,891 | 106,295 | 150,236 |

In addition to these school types, there was *Enbetskolan*, which had relatively few students: it comprised 20,000 students at its highest point in 1961.

Due to the gradual implementation of *Grundskolan*, official statistics on the number of students in grades 1-9 in the 1960s are quite complicated. But if we only consider *Grundskolan* from 1967 to 1972, when the old school types had fewer students, we have the following figures:

Table 4. Number of students in *Grundskolan*, 1967-1972 (Source: SCB 1973)

| Year | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 |
|------|---------|---------|---------|---------|---------|---------|
| | 872,873 | 903,885 | 933,060 | 954,038 | 977,194 | 989,147 |

From 1973 and onward, when all the old school types were phased out, we have better figures regarding the number of students.

Table 5. Number of students in *Grundskolan*, 1973–1979 (Source: SCB 1980)

| Year | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1,000,934 | 1,016,014 | 1,026,847 | 1,033,086 | 1,037,910 | 1,043,043 | 1,043,333 |

For the period of 1940–1960, in Tables 1-3 we can observe an increase in the number of students in *Folkskolan* and *Realskolan*, in contrast to the period of 1960–1979, when the number of students was stable; see Tables 1-5.

In relation to the New Math reform, the big increase of students in grades 1-9, particularly in grades 7-9, took place before the reform. Recall that the reform was prepared in the 1960s and implemented in the 1970s. Thus, during the implementation of New Math, the school system was not under pressure from quickly increasing numbers of students.

The conditions for producing new textbooks appear to have been good in the period of 1940-1960: an increasing number of students meant increasing demand for textbooks. But more students also meant more new teachers who may have been more prone to testing new textbooks. However, the statistics regarding the influx of new textbooks for the period of 1930-1980 show quite the opposite to be true.

Influx of new textbooks, 1930-1980

In Diagrams 1-13, vertical bars represent the number of new textbooks each year in different types of schools during various periods. The broken line represents the sliding average for each year and the preceding four years.

Diagrams 1-3 concern the numbers for *Folkskolan* in the period of 1930-1962.

Diagram 1. *Folkskolan* (1-2) Numbers of new series in Arithmetic

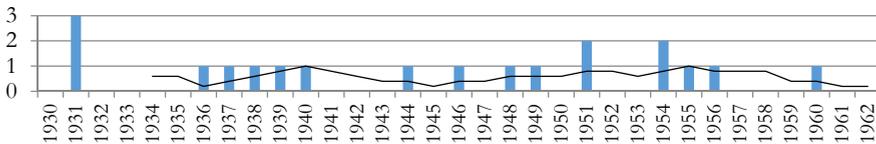


Diagram 2. *Folkskolan* (3-6). Numbers of new series in Arithmetic

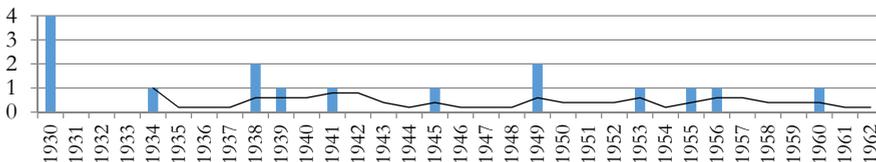
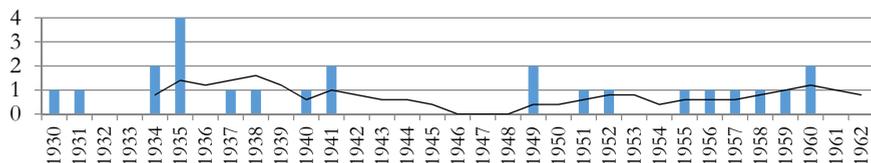


Diagram 3. *Folkskolan* (7-9). Numbers of new series in Arithmetic



The relatively steady influx of new textbooks may be due to few changes made to the syllabus. In the period of 1930-1962, the *Folkskolan* syllabus changed only once, in 1955. Apart from that, the syllabus of 1919 was in effect throughout the period. The slight increase from the late 1940s in grades 1-2 and 7-9 (if we consider the sliding average) may be due to the increase in students. Here, we should also note that mandatory schools, i.e. *Folkskolan* and later *Grundskolan* as well, were required from 1946 and onwards to provide students with free textbooks (SB 1961, p. 176). This might also explain the increases in grades 1-2 and 7-9. Nonetheless, we do not see a similar increase in grades 3-6, which indicates that these factors were not decisive for the production of new textbooks.

The influx of new textbooks for *Realskolan* differed from *Folkskolan*. In general, far fewer new textbooks were produced for *Realskolan*.

Diagram 4. *Realskolan*, Geometry, Number of new textbooks

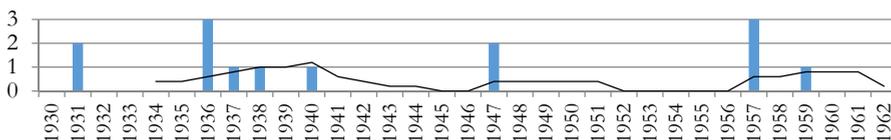


Diagram 5. *Realskolan* Algebra, Number of new textbooks

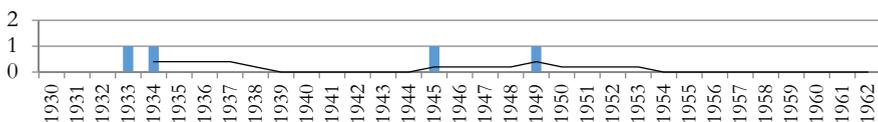


Diagram 6. *Realskolan* Arithmetic, Number of new textbooks

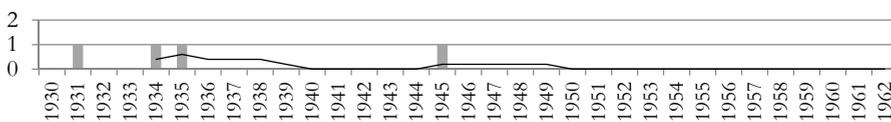
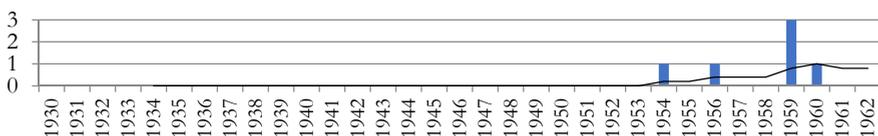


Diagram 7. *Realskolan* Mathematics, Number of new textbooks



The fact that the schools within *Realskolan* were not required to provide free textbooks might explain the low level of influx of new textbooks.

Regarding Diagram 6 and the low level of new textbooks in Arithmetic, the possibility that textbooks intended for *Folkskolan* were also used in *Realskolan* must be taken into consideration, and might also explain the low influx of new textbooks. Arithmetic was a major topic in *Realskolan* (4-6) and also a major topic in *Folkskolan*.

Algebra, however, was not a topic in *Folkskolan* in grades 3-6 and only a minor topic in grade 7. In this case, we can rule out the possibility of sharing textbooks with *Folkskolan*.

As Table 3 shows, the number of students in *Realskolan* increased from 1930 to 1960. However, this does not seem to have caused an increase in the number of new textbooks, especially not in algebra. In geometry, we can see an increase in new textbooks in the second half of the 1930s, but not later, when the rate of increase in students really took off.

Not until the 1950s can we discern an increase in the influx of new textbooks for *Realskolan*. This is probably related to the new syllabus introduced in 1955. Before that, *Realskolan* had not had a new syllabus since 1933.

In the 1950s, the format of the *Realskolan* textbooks had also changed. Rather than separate books for each topic, the books included the word “mathematics” in the title and covered several topics. Here, we should note that three of the six textbooks were intended for the practical programme. Two of the books were analogous to books intended for the theoretical programme and had the same authors. However, separate books in geometry were still published, which I cannot explain.

In the 1950s, some schools were converted to a school type called *Enbetskolan*, which is described in the previous section. Naturally, textbooks were also produced for *Enbetskolan*.

Diagram 8. *Enbetskolan* (1-3), number of new series

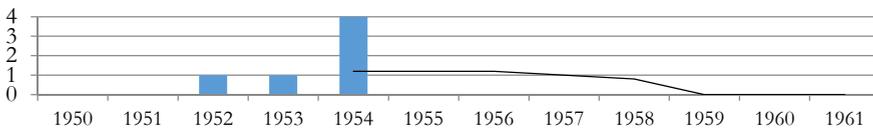
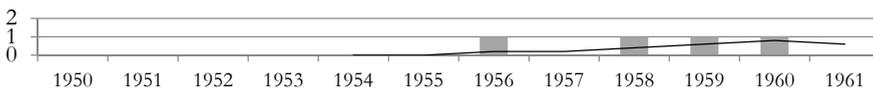


Diagram 9. *Enbetskolan* (4-6), number of new series



Diagram 10. *Enbetskolan* (7-9), number of new series



In comparison to the production of textbooks for the other school types, quite a lot of new textbooks were produced for *Enbetskolan* in the 1950s.

In 1962, *Grundskolan* was introduced, along with a new syllabus. But a new syllabus was launched already in 1969: the New Math syllabus. It was followed by another new syllabus in 1980. If we compare the influx of new textbooks in *Grundskolan* with the influx of new textbooks in *Folkskolan*, *Realskolan* and *Enbetskolan*, a striking difference can be seen: far more new textbooks, or series of textbooks, were being produced.

In Diagrams 11-13, the sliding average is mainly between 1 and 2. Thus, compared with Diagrams 1-3 regarding *Folkskolan*, the influx of new textbooks was generally twice as big. The differences between *Grundskolan* and *Realskolan* are of course even greater, considering the very small influx of textbooks in *Realskolan*. Note that students had access to free textbooks in *Folkskolan* since 1946, as well as in *Grundskolan*, so that cannot explain the differences between those two school types.

Diagram 11. *Grundskolan* (1-3). Number of new series.

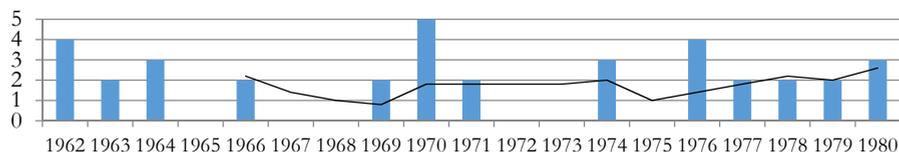


Diagram 12. *Grundskolan* (4-6). Number of new series.

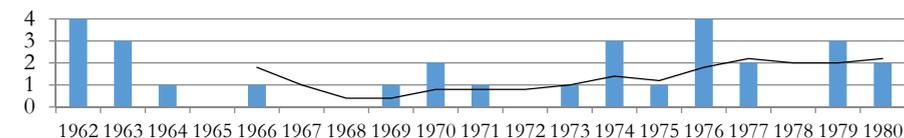
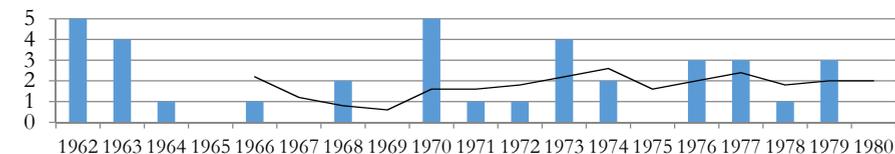


Diagram 13. *Grundskolan* (7-9). Number of new series.



To further illustrate the picture of the situation in the 1960s and 70s, we can also consider the influx of new authors in the period of 1962–1980.

Several of the first authors of the *Grundskolan* textbooks had never published textbooks before. Table 6 below shows the aggregated number of new textbook authors in the periods of 1962-1968 and 1969-1979. These authors had not published when the preceding syllabus was in effect.

Table 6. New authors *Grundskolan* (1-9), 1962-1979

| Gr | Period | Number of authors | Number of new authors | Share new authors |
|-----|-----------|-------------------|-----------------------|-------------------|
| 1-3 | 1962-1968 | 28 | 13 | 53.6% |
| 1-3 | 1969-1979 | 48 | 40 | 83.3% |
| 4-6 | 1962-1968 | 28 | 14 | 50.0% |
| 4-6 | 1969-1979 | 42 | 37 | 88.1% |
| 7-9 | 1962-1968 | 37 | 20 | 54.1% |
| 7-9 | 1969-1979 | 38 | 25 | 65.8% |

In Table 6, we can see that the influx of new authors during the period of 1969–1979 was greater in absolute as well as in relative numbers.

If we compare Diagrams 1-13 regarding the influx of new textbooks and Tables 1-5 regarding numbers of students, the influx of new textbooks does not seem to be related to changes in the number of students. If that were the case, we should have observed the greatest influx of new textbooks before 1960 rather than after. The number of students increased much more slowly after 1960.

However, the increase in the number of new textbooks as well as new authors from the 1950s and onwards coincides with another increase: the schools' spending on teaching materials. According to an extensive state investigation on teaching materials, schools' spending on teaching materials – mainly textbooks – went up 10 times from 1950 to 1970 (LU 1971, p. 53). This increase in spending on teaching materials was part of a general trend. After World War II, the Swedish welfare state expanded significantly (Larsson & Westberg 2011, p. 40), which meant that education in general received much more funding.

In the state investigation mentioned above, several interrelated causes of the increased spending on textbooks were identified: the price per book increased; technical quality was higher; there were more students and free textbooks, and there was greater differentiation in terms of more course programmes, the latter of which required specially designed textbooks (LU 1971, pp. 53, 179, 200). Here we should observe that the price per book did not increase 10 times, according to the report. The report noted that the price per book doubled from 1960 to 1971 (LU 1971, pp. 53).

Still, none of these factors can explain why so many new textbooks in mathematics were published compared with earlier periods. However, the schools' increased spending per se might have been a cause: if the publishing companies knew that in general, schools were willing to spend significant money on textbooks, they may have perceived the risk of a loss on producing a new textbook as low. It is important to observe that the textbook industry seems to have been profitable around 1970. According to the investigation mentioned above, basically every new textbook was a success (LU 1971, p. 190). I do not consider this potential cause to be a triggering factor, but rather a condition that made it possible to produce more new mathematics textbooks.

Finally, if we only consider Diagrams 11-13 and the influx of new textbooks between the syllabi of 1962, 1969 and 1980, we can discern two different patterns.

In both cases, several new textbooks appeared when a new syllabus took effect. But in the 60s, high numbers were followed by a decrease and a low level, with some minor exceptions, until the next syllabus. One of the exceptions occurs in Diagram 13 in 1968. One of those series is an experimental series developed in a project run by the National Board of Education. The second series included books on sets and logic and should instead be counted together with the series published in 1969, when the New Math syllabus was issued. In contrast to the 1960s, the influx of new textbooks increased by the mid-1970s and remained at a relatively high level until the next syllabus was issued in 1980.

The increase in the mid-1970s coincided with a fundamental change in policy for the national textbook review in 1974: the review, whose approval was necessary for publication until then, was no longer mandatory, except for textbooks in civics, history, geography and religion (Johnsson Harrie 2009, pp. 12-13). In this case, I think it is reasonable to discuss a possible triggering factor regarding the increase of new textbooks after the mid-1970s.

Intensified marketing, 1960-1980

Diagrams 1-13 above show a higher influx of new textbooks in the period of 1960-1980 than the period of 1930-1960. In this section, I propose that this change coincided with intensified marketing to teachers by the publishing companies.²

Initially, new textbooks probably entailed higher costs for the publishing companies, at least compared with publishing new editions of older books. Furthermore, it may have involved even higher costs if the companies contracted more new authors, which Table 6 indicates, as new authors may need more support and advice. According to one of the state investigations concerning the textbook market, the basic costs of a new textbook were covered in 3-4 years in the 1970s (UL 1980, p. 99).

My point is that the publication of more new textbooks in mathematics in a shorter time frame probably went hand in hand with increased competition and more marketing; the companies want to make profits on products that have initially been nothing but a loss. Here, we should notice that the publishing companies were forced to cover the costs of producing a new textbook within a shorter time frame than before 1950 (LU 1971, p. 53); this meant that fewer editions of a textbook was supposed to cover the production costs. This was a consequence of shorter intervals between new syllabi, issued in 1955, 1962 and 1969. Thus, there were probably more people than before 1970 – both in publishing and authors – seeking to influence teachers' views on teaching mathematics.

² During the period of 1930-1980, all publishing companies were private.

Indeed, the publishing companies did increase their spending on marketing in general in the 1970s. According to a report issued in 1970, the textbook market was price-insensitive and competing by lowering prices was not an option. Rather, the primary means of competition were product development and marketing (LU 1971, p. 201). From 1970 to 1976, marketing costs increased by 171 percent in the major companies and by 151 percent in the smaller companies. The share for marketing of the total costs of textbook production increased from 7.6 to 11.9 percent in the major companies and from 7.8 to 8.3 percent in the smaller companies (SPK 1978, p. 107). This was also the share of the companies' total costs for textbooks that increased the most (SPK 1978, p. 96).

Marketing was done via different channels: advertisements in teacher journals; sending brochures and test copies to schools; exhibitions and so-called school-book consultants (LU 1971, pp. 67-68; UL 1980, pp. 65-66). The consultants functioned as links between editors and teachers; they were specially trained to inform teachers about teaching materials and often had backgrounds as teachers. They also gathered information from the teachers about their use of the textbooks. In 1980, about 70 people were fully employed as consultants, mainly in the major companies (UL 1980, p. 65).

According to the state investigations, companies were dominant in the dissemination of information about textbooks, at least compared to the state. In a survey from the early 1970s of 7 municipalities and about 100 school representatives who were responsible for teaching materials, respondents answered that the companies were the most important source of textbook information by far (LU 1971, p. 70). The same survey also indicated that information from the authorities had a small impact on the schools' choices of textbooks.

In 1974, however, a state institute for teaching material information was established (*Statens Institut för Läromedelsinformation, SIL*). But there are reasons to question its success in disseminating textbook information. According to one of the state investigations, the SIL's reports were seldom requisitioned by teachers (UL 1980, pp. 59-61, 71). Moreover, the SIL had fewer resources than the publishing companies. In 1976, their budget for teaching material information was about SEK 2 million. The same year the major publishing companies spent SEK 36.6 million on marketing alone (UL 1980, p. 103).

Alas, we do not have the same detailed information about the publishing industry and its economy in the early 1960s and earlier. However, the companies' marketing is briefly mentioned in an official report on textbooks from 1960. The channels for marketing were basically the same as in the 1970s and marketing activities were considered high (*SB 1961, pp. 118-119, 142*). It is difficult to say what "high" means, but an investigation in the late 1960s analysed the causes of the cost increase of textbooks. Marketing was not identified as a cause (LU 1971, p. 53), indicating that costs of marketing were lower in the early 1960s than in the 1970s. Together with the fact that fewer new mathematics textbooks were published in the 1960s than in the

1970s (see Diagrams 1-13), this indicates that marketing of mathematics textbooks was more intensive in the 1970s than in the 1960s.

It is important to note that the official reports mentioned above mainly concern the textbook market overall, and not each individual school subject. However, since mathematics was one of the major school subjects and the reports do not indicate its market was any different, it is unlikely that the mathematics textbook market was in fact different.

Conclusions and further research

The bibliometric analysis presented in this paper shows that the influx of new textbooks in mathematics (1-9) was greater in the period of 1960-1980 than in the period of 1930-1960. Different causes of this difference have been considered and the likeliest is the schools' increased spending on textbooks. This cause is considered a condition that made a high influx possible and not a triggering cause.

Regarding the period of 1930-1960, the analysis also shows that the influx of new textbooks in *Realskolan* – lower secondary school – was very low in the period of 1930-1950, even though the number of students increased in the same period. This might indicate that the textbooks were good, or at least that teachers thought they were good. However, the results of the national exams in grade 9 suggest otherwise. From the early 1930s, we can observe a clear negative trend in the results until 1950 (Prytz 2007, p. 165). This requires further research. In that situation, why did authors and publishing companies not try or fail to produce new textbooks?

Regarding the period of 1960-1980, the analysis shows that the influx of new textbooks was greater in the 1970s, but also distributed differently in that period. Not surprisingly, we can observe peaks right after the introductions of new syllabi in 1962 and 1969. However, in 1975 the influx of new textbooks took off again and remained at a high level until a new syllabus was issued in 1980. A likely triggering cause of this increase is that the textbook review became voluntary in 1974. Before that, the review was mandatory.

I also propose that the publishing houses intensified marketing to teachers, especially in the 1970s, as production of new mathematics textbooks increased. This conjecture is supported by official reports, which show that the publishing companies spent increasingly more resources on marketing in general in the 1970s, and the official reports give no reason to believe that mathematics was an exception.

Thus, when the state made the textbook review voluntary and lessened the control of the publishing companies, not only did the companies give teachers more choices; they also intensified their efforts to influence teachers.

These changes to textbook production, spending on textbooks, control mechanisms and marketing are interesting in relation to the reforms to mathematics in Swedish schools that took place in the 1960s and 1970s, such as the New Math reform, which was planned in the 1960s and implemented in the 1970s. The results presented in this paper suggest that the conditions for textbook production changed from the time the reform was planned to the time of its implementation. Here, it is important to notice that the New Math reform relied heavily on textbooks. Developing new textbooks comprised a significant part of preparing for the reform (Prytz 2016, pp. 73-74).

Further research is necessary to deepen our understanding of these aspects of the New Math reform. For instance, the publishing companies could be researched in greater depth. Which companies dominated the market and what were their publication strategies? In addition, authors' backgrounds could be analysed. It would also be interesting to study how the content of the textbooks changed when the textbook review became voluntary in 1974.

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